BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND

AFMC INSTRUCTION 21-107

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Maintenance

TOOL CONTROL AND ACCOUNTABILITY PROGRAM

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 21-1, *Managing Aerospace Equipment Maintenance* and AFMCPD 21-1, *Depot Maintenance Policy.* It provides policy and guidance for implementing and maintaining a Tool Control and Accountability Program within all AFMC units, organizations, depots, product centers, test centers, tenant units under Host/Base tenant agreement, and contractor/contracted services including operating locations attached to an AFMC depot, test, or product center. When developing local procedures, bargaining obligations must be met with the respective local union. Vehicle Maintenance will control and account for tools used within the aircraft maintenance areas in accordance with AFMAN 24-307. Civil Engineering will control and account for tools used within the aircraft maintenance areas following the guidance in AFOSH STD 91-100, Chapter 8. All personnel must be aware and understand the positive aspects of the program in terms of saving lives, money and equipment.

SUMMARY OF REVISIONS

This is a complete rewrite of this instruction.

Chapter 1

GENERAL POLICY

1.1. Introduction. The AFMC Tool Control and Accountability Program is designed to eliminate the proliferation of duplicate, excess, or infrequently used tools. The objective of the program is to prevent foreign object damage (FOD) and to realize long term cost benefits associated with improved inventory control and accountability. The primary focal point of this program is the individual tool user, however it is necessary to have support, training and constant emphasis from all levels of management for the program to be effective.

1.2. Applicability. Organizations which perform either, depot, facility or test center maintenance will implement a tool control and accountability program. This applies to organizations, which either belong to, are contracted by, or are gained by AFMC. The implemented program will, as a minimum, meet the requirements of this instruction. The program will include guidance for workers, supervisors, and all other higher levels of management.

Note: Local directive will be developed or updated for implementation within 180 days from the publication of this instruction. Recommended changes to this instruction will be forwarded to HQ AFMC/ LGP.

1.3. Supplemental Directives. Each base/center will establish a tool control manager position and identify the individual selected to fill the position in writing. This position will be established at directorate, organization, or unit manager level, as required, to effectively manage the AFMC tool control program. Base/center supplemental directives will include the following:

1.3.1. Kit content determination procedures.

1.3.2. Initial and replacement tool marking.

1.3.3. Management of Tool Kit Custodial Receipt Listing (TKCRL).

1.3.4. Lost/Found tool reporting procedures to include:

1.3.4.1. Procedures for initiating, conducting, and retaining lost/found tool and search documentation.

1.3.4.2. Grounded/Impounded/Release procedures for aircraft, engines, missiles, support equipment, AGE, and end items or components.

1.3.5. Scheduled and random supervisor’s inventory inspection requirements.

1.3.6. Tool kit issue and turn-in procedures.

1.3.7. Control of crib-issued loaned tool procedures.

1.3.8. Issue, receipt, and control of tool kits used to support temporary duty (TDY) teams and tool control procedures for TDY personnel.

1.3.9. Control and accountability procedures for locally manufactured and modified tools.

1.3.10. Long term tool kit storage procedures.

1.3.11. Procedures for control of tool issue centers.

1.3.12. Procedures for control of production control centers.

1.3.13. Procedures for control of expendable items.

1.3.14. Procedures for control of consumable items.

1.3.15. Procedures for control of precision measurement equipment issued/dispatched in work areas.

1.3.16. Procedures for control of shop machine accessories/attachments.

1.3.17. Procedures for control of tooling included in Time Compliance Technical Orders (TCTO)/ Mod kits.

1.4. Forms. Locally devised forms, with the exception of TKCRL supplemental list, will not be used without approval of HQ AFMC/LGP. The following forms or computer-generated equivalent will be used for documenting tool inventories, inspections, lost/found tool reporting and training. All other approved forms required will be identified in local directives.

1.4.1. AFMC Form 309, **AFMC Tool Control Inventory Record**.

1.4.2. AFMC Form 310, **Lost/Found Item Report**.

1.4.3. AFMC Form 311, **Certificate of Responsibility for Government Property**.

1.4.4. AF Form 1297, **Temporary Issue Receipt**.

1.4.5. AFMC Form 307, **Temporary Loan Record**.

Chapter 2

TOOL CONTROL

2.1. Tool Kits. The number of tool kits and their contents must be adequate and accounted for. Personnel must have the necessary quality tools readily available to them to accomplish their job while, at the same time, holding cost and FOD potential to an absolute minimum. Tool kit contents will be standardized by skill, task, work area or a combination thereof. The tool kit custodial receipt listing (TKCRL) will specify the kit ID number and will list all tools by drawer location.

2.1.1. Inventory Listing. A copy of the TKCRL will be used as the inventory listing for the assigned tool kit. TKCRLs will be kept in a clean, readable condition. Whenever a listing becomes unreadable, a copy of the master or original will be issued. A master TKCRL for each tool kit will be filed in the tool issue center.

2.1.2. Shadowing/Inlay/Silhouette/Outlined. Tool kits will be shadowed to reduce start-of-shift, end-of-job, and end-of-shift inventory times. Mechanics have the option to lay out their kits to improve their personal efficiency but the layout must be reflected in the TKCRL by drawer location.

2.1.3. Consumables. Supervisor approval is required before any consumable is added to a tool kit and they will be controlled according to this AFMCI and local directives. Consumables in a tool kit will be shadowed, marked and identified by nomenclature, size (if applicable) and quantity, on the tool kit and supervisor's TKCRL (not necessarily the master TKCRL). The technician and their supervisor will initial and date the changes on both TKCRLs and/or supplemental listing. Inventory and lost tool procedures will apply to consumable items.

2.1.4. Expendable Items. Supervisor approval is required before any expendable is added to a tool kit and they will be controlled according to this AFMCI and local directives. Expendables in a tool kit will be shadowed, marked and identified by nomenclature, size (if applicable) and quantity, on the tool kit and supervisor's TKCRL (not necessarily the master TKCRL). Strict accountability and control procedures for these items will be included in the local tool control operating instruction. Inventory and lost tool procedures will apply to expendable items.

2.1.5. Hardware will not be stored in toolboxes.

2.1.6. Personal Items. Technician's personal items (i.e. rings, wallet, and watches) may be stored in tool kits however, technicians are limited to only one personal drawer. The drawer must be clearly labeled "Personal Drawer". Each technician should be provided a non-mobile personal locker, if possible, to store other personal items. A drawer or an additional tool box/container, kept with or near the technician's toolbox, is authorized for protective equipment and inclement weather apparel and must be clearly labeled "Personal Protective Equipment Drawer". To reduce the potential for FOD, it is imperative technicians limit excessive amounts of personal items in the immediate work area. **Personal tools are prohibited in any maintenance area or on the flightline (e.g. Mini-Mag flashlights, Leathermans, Buck knifes, etc).** The personal drawer and protective equipment container are subject to toolbox inspections conducted in accordance with paragraph 3.2.2. If a non-mobile personal locker is not made available to the employee, the personal drawer, and only the personal drawer, will not be subject to toolbox inspections. For purposes of this paragraph [or section], an "inspection" does not include a properly authorized search based on probable cause or other lawful justification.

2.2. ID Numbers. Each tool kit and all assigned tools will be marked with an individual number. The first two characters will identify the base/center IAW Attachment 1. ID numbers for tools and tool kits received from closing bases will be changed to the gaining base's ID prior to reissue of tools.

2.3. Tool Control. Tools or equipment issued individually or not as part of a tool kit will be marked prior to issue with the center code and a number identifying it to the proper tool issue center.

2.3.1. Tool Box/Kit Marking. Marking of tool boxes/kits will be done by a method that is legible, not easily changed, duplicated or removed. All tool kits (container, box, rollaway, etc) along with each tool and other contents assigned to the tool kit will be marked with the same number. Rollaways with attached or stack on tool kits will be secured to each other to prevent separation if tools have the same ID number.

2.3.2. Mobility Boxes. Mark mobility toolboxes according to AFI 10-403, Deployment Planning.

2.3.3. Tool Marking. All tools will be marked with their appropriate ID number.

2.3.3.1. Tools Impractical to Mark. Tools impractical to mark due to method of use will be controlled and lost tool procedures will apply. Local directives will identify all tools in this category and specify the method of control.

2.3.3.2. Tools Too Small to Mark. Tools too small to mark will be identified by an asterisk (or some other method to clearly identify those tools) on the TKCRL. They will be placed in a container and the container will be marked with the quantity and the tool kit number and the container will be shadowed when issued as part of a tool kit.

2.3.3.3. Fiberglass/wooden handled hammers will be etched on the metal head only (not the handle) in a non-impact area.

2.3.4. Procedures will be established to identify tools that are missing, on order, or removed for calibration.

2.3.5. Common Accessories and Support Equipment will be treated as either loaned items IAW paragraph 2.10. or issued items IAW paragraph 2.6. Local procedures will identify how these items will be identified, (i.e. loaned or issued.)

2.4. Production Support Centers (PSC). The Production Support Center will be in an enclosed, secure and controlled area and will be used for the purpose of maintaining and stocking CA/CRL tooling/equipment, locally manufactured, modified, or special end item unique tools and equipment. PSC will be secure so that the only access is through lockable doors. PSC can store/order/issue consumable or expendable type items needed to support the production efforts of a particular unit or weapon system.

2.5. Tool Issue Center (Tool Crib). Tool issue center will be operated in accordance with AFMCI 21-127, Depot Maintenance Plant Management.

2.6. Initial issue of Permanent Issued Tool Kits. An ID number will be assigned to all tool kits issued. The tool container along with all contents will be marked with the same ID (see paragraph 2.3 for exceptions). Each tool kit will have a TKCRL signed and dated by both issuing and receiving personnel. Once the employee signs the TKCRL, they are accepting that the documentation matches the physical inventory. The master TKCRL (original) will be maintained at the tool issue center. The second copy of the TKCRL will remain with the tool kit at all times and will be suitably protected (plastic bag, etc.) so the list

will remain legible. A computerized tracking system or third copy of the TKCRL will be maintained by the individual's supervisor and used when performing supervisor inspections.

2.7. Replacement. Only tools listed on the TKCRL are authorized for replacement. Tools and expendables will be replaced on a one-for-one basis. The ID number will be verified and marked on the replacement tool before it is issued. If a tool is broken, the mechanic must produce as much of the broken tool/item as possible in order to obtain a replacement. When the above criteria are not met, reissue will require an initiated AFMC Form 310 for verification that lost tool procedures were accomplished. If a replacement tool must be backordered, evidence of non-issue will be given to the individual responsible for the tool kit and kept in the tool kit.

2.8. Cleco Control Procedures. Local procedures will be developed to ensure accountability of Clecos. Marking/identifying each Cleco is not required, but issue and receipt procedures must be established to ensure positive control.

2.9. Rag Control Procedures. Rag control applies to all organizations and personnel. Local procedures will be developed for accountability of rags. While marking or identifying each shop rag with a tool kit number is not necessary, issue and receipt procedures will be established to ensure strict control.

2.9.1. Production Support Centers or their functional equivalent should have responsibilities for rag control and accountability.

2.10. Production Support/Tool Issue Center Loaned Tools. Production support/tool issue centers will develop local procedures to ensure tools, issued on an as-needed basis, will be returned to the issue point. An audit trail will exist on all items on loan. Items containing multiple parts will have an attached inventory list. The issuing tool center and the individual obtaining the loan will perform a joint issue and return inventory. During the duration of the loan, the individual signing for the loan item must perform all required inventory and operator maintenance actions. A hand receipt/chit or computer tracking system will be used to track to whom the tool was loaned. These items will not be on loan for more than 30 days. If tools are required for more than 30 days, the location of the tool must be physically verified and the loan must be renewed. Organizations issuing tool kits on a daily basis will maintain a file of the master TKCRLs used for daily issue in the issue center. The second copy will be used by the issuing and receiving personnel for issue and turn-in inventories.

2.11. Chit System. A chit system may be used to issue and account for tools, where more than one person is using the same tool kit. Chits are issued in sets to allow technicians to borrow more than one tool from a kit or shadow board. Each chit-set is numbered to identify the work center controlling the chits. Chits will be kept secure. If a chit system is used, the using organization will:

2.11.1. Establish procedures for issuing and controlling chits. Chits will be kept under lock and key, and will only be issued to the assigned technician.

2.12. Grease Guns and Hand Oilers. All grease guns, hand oilers (oil cans) and other refillable dispensers will be marked/etched with the nomenclature and military specification of the grease, oil or other contents. If no military specification exists, the manufacture's name, part number and national stock number will be used. These markings will be placed on the head/handle and barrel of the grease gun and on the reservoir of oil cans and other dispensers. NOTE: If containers are used to hold or apply substances clas-

sified as Hazardous Materials, ensure labeling requirements of AFOSH STD 161-21, Hazardous Communication, and local directives are accomplished.

2.13. Tools/Expendable Items for Titanium. Tools/expendable items used for Titanium engine blade blending will be kept in a special purpose kit separate from other tools. In addition to normal TK identification, these kits will be marked "CONTROLLED ITEMS" "FOR TITANIUM ENGINE BLADE BLENDING ONLY".

2.14. Tools/Expendable Items for Oxygen Equipment. Tools/expendable items used for working on oxygen equipment will be kept in a special purpose kit separate from other tools and free from grease and oils. In addition to normal TK identification, these kits will be marked "CONTROLLED ITEMS" "FOR OXYGEN EQUIPMENT ONLY".

2.15. Shop Machinery Accessories/Attachments. Shop machinery accessories/attachments will be kept and stored in a neat and orderly fashion. As a minimum, storage cabinets and/or drawers will be labeled to identify the contents as "Shop Machinery Accessories/Attachments". These items do not require etching/marking/numbering.

2.16. TDY Support. All tools and equipment needed to support TDY teams will be controlled with an audit trail for accountability as prescribed by local directives. A supervisor's inspection will be accomplished on all tool kits prior to and upon return of TDY support.

2.17. Locally Manufactured or Developed/Modified Tools. A local OI is required which addresses procedures for a controlled locally manufactured or developed/modified tool program. Drawings for locally manufactured, modified, developed or special end item unique tools and equipment not published in technical data must be approved for use by Planning/Engineering office. Requests for approval of locally manufactured or developed/modified tools must include a description of the item and its intended use, a list of materials required, cost, and procedures for manufacturing the tool. If possible, include an example or drawing. The Engineering office will keep copies of all approved local manufactured or developed/modified tools and equipment. The approvals will be reviewed every 2 years and the review will be annotated. (Tools/Equipment identified and approved for construction in a TO are considered pre-approved and do not require approval by the process in this paragraph, reference AFMCI 21-110).

Chapter 3

ACCOUNTABILITY

3.1. Traceability. A feature of the tool control and accountability program which allows any tool to be traced to its source through the use of ID numbers and related documents. The intent of traceability is to impress upon all personnel the benefits of immediate lost tool reporting. Failure to report lost tools immediately increases the risk of loss of life, monetary and disciplinary liabilities for damage to an aircraft or other end items due to FOD.

3.2. Inventory and Inspection Requirements. Tool kit and production support center inventories and inspections will be accomplished in accordance with local directives to verify they contain all the items on the TKCRL or in production support/tool issue centers. Inventory and inspection responsibilities and minimum frequencies are as follows:

3.2.1. Daily Inspection. The person who is responsible for the tool kit will perform an inventory when the tool kit is opened (start of shift), at the completion of a logical sequence of work (defined as a job, task, workstep) or movement to another area, and end of workday (end of shift). In addition, when the responsible person performs a kit inventory at the end of the workday (end of shift), the inventory will be documented on AFMC Form 309 if the kit is used. One person will be assigned the responsibility for a tool kit used by more than one individual. Local procedures will specify a method of controlling removal and replacement of tools as stated in paragraph 2.11. More frequent specific inventory points will be determined locally. The intent is to identify the point at which a lost tool would most effectively be located.

3.2.2. Supervisory Inspection. Supervisors are responsible for assuring all tool kits assigned to them and each subordinate are inspected. The supervisor's inspections will include verification of the TKCRL against the tool kit contents as well as ensuring each tool has a matching identification number. Documentation of the supervisor's inventory on the AFMC Form 309 is required. The required supervisor's inspections are as follows:

3.2.2.1. At least every 90 days the supervisor and employee must inspect the tool boxes under their control for the following areas:

3.2.2.1.1. Ensure all tools are properly Shadowed/Inlay/Silhouette/Outlined.

3.2.2.1.2. Ensure no excessive consumables/expendables are maintained in the TK.

3.2.2.1.3. Ensure all tools are properly marked/etched.

3.2.2.1.4. Ensure kit content matches documentation (matching TKCRL to kit contents, loaned items to kit contents, and lost/broken/missing item documentation to kit contents).

3.2.2.1.5. Ensure TK is free of clutter.

3.2.2.1.6. Ensure proper personal drawer use (no unauthorized items, no excessive amounts of drawers used).

3.2.2.1.7. Ensure all tools are serviceable and if they are not, ensure proper documentation and replacement action is taken.

3.2.2.1.8. Ensure Test Measurement Diagnostic Equipment (TMDE) is not overdue calibration and limited calibration stickers are initialed.

3.2.2.2. Tool kit inspections will occur at least every 365 days for AFRC personnel. When AFRC personnel are mobilized they will perform an initial supervisor's inspection and then comply with the prescribed requirements of the assigned center.

3.2.3. Annual Review. Each tool kit type will be reviewed annually for content and verification that the kit type contains the required type and quantity of tools. This review will involve both management and production personnel and will focus on eliminating excess, duplicate and infrequently used tools. The review will be documented and forwarded to the center tool manager.

3.2.4. Organizations Responsible for Tool Kit and Item Issue. All production support centers will inspect tool kits upon issue and turn-in IAW AFMCI 21-127. Production support center supervisors will develop procedures for controlling all items in the production support center and provide input into local tool control directives. Production support center personnel must annually inventory all items (i.e. tools/equipment and shop aids) contained in the production support centers. The date of the inventory will be documented according to local procedures and used to track when the next annual inspection is due.

3.2.5. Long Term Toolbox Storage. Special function tool kits such as aircraft battle damage repair (ABDR), combat distribution team (CDT), crash recovery, or other mobility taskings may be stored long-term. Tool kits will be inspected using the supervisor inspection criteria and sealed before being stored in an enclosed, controlled, secured area. While in storage, these kits will be inspected every 18 months for inventory content and corrosion prevention. Tool kits authorized for long term storage and storage handling will be locally determined.

3.3. Lost/Found Tool Procedures. Local procedures must specify that lost tools must be reported within two hours of their suspected loss to the responsible supervisor by the person making the discovery. Local procedures will specify the instructions relating to the documentation, search, aircraft or end item impoundment or release, and conditions for discontinuance of the search. Aircraft in 4000 storage status are exempted from impoundment procedures.

3.3.1. Aircraft. Only the aircraft director, logistics or operations group commander, or an officially designated representative can release an aircraft which has been grounded, impounded, or terminate the search for a lost tool which cannot be found.

3.3.2. Components and Other Organizations. Only the product director, logistics or operations group commander or an officially designated representative can release components, such as engines, parachutes or ejection seats or terminate a tool search for a lost tool which cannot be found as it pertains to their operation.

3.3.3. Documentation. Documentation on lost tools not found will be maintained a minimum of two (2) years. Aircraft thought to contain a lost tool will be impounded and a Red X will be placed in the aircraft forms at the point when the 781 becomes the primary work control document.

3.3.4. Off Base Reporting. Deployed TDY teams will coordinate with the host base director or equivalent on all lost tools not found. AFMC Form 310 will be completed and a copy sent to the appropriate home base director or equivalent.

3.3.5. All lost/found tools/items will have AFMC Form 310 filled out and completed IAW local procedures.

3.4. Security. The person responsible for a tool kit is also responsible for its security. Management will ensure the means (securing devices) and the methods (local procedures) are provided to each person responsible for a tool kit. Tools lost or suspected as stolen will be reported immediately to the appropriate supervisor and documented on AFMC Form 310.

Chapter 4

TRAINING

4.1. Overview. For a strong, viable tool control and accountability program, all personnel who use tools in their daily work requirements must receive appropriate training. This training must stress all aspects of tool control including individual responsibilities and the consequences of noncompliance. Training programs will be a combination of on-the-job and supervisory briefings.

4.2. Requirements. Each base/center will use the AFMC standard tool control course MRXMAS0001200 for initial and refresher tool control training and require review of local tool control directives. All employees who work with tools, and all levels of their management (branch level and below) will receive the initial tool control course and the annual review of local tool control directives and refresher training. Personnel loaned, transferred, contracted or TDY will have received the initial training course, and will review all local directives pertaining to tool control and accountability prior to the start of work.

4.3. Documentation. All tool control training will be documented in CAMS, PAC, or EMTS.

Base Marking Codes

CODE	BASE/CENTER
AM	AMARC
AR	Arnold AFB
BR	Brooks AFB
EB	Edwards AFB
EG	Eglin AFB
GR	Griffiss-Neads AFB
HA	Hanscom AFB
HL	OO-ALC, Hill AFB (previous HB, HD, HK & HN items will be authorized)
KR	Kirkland AFB
OC	OC-ALC, Tinker AFB
WR	WR-ALC, Robins AFB (previous X items will be authorized)
WP	WPAFB, Wright-Patterson AFB
	Los Angles AFB
	Nellis AFB
	Holloman AFB
	Vandenberg AFB

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Attachment 1

GLOSSARY OF TERMS

Terms

Tool Kit (TK)—A container used to store tools or equipment and to maintain positive control and ease of inventory.

Dispatchable TKs—Tool kits/boxes designed for checkout by individuals to take to a job site, with one individual responsible for the TK.

Production Support/Tool Issue Center—Areas authorized for storage and issue of tools, equipment, and TKs.

Consumables—Items used in conjunction with tooling/equipment, yet after limited usage do not maintain their original configuration and are considered used up. Examples are safety wire, solder, tape, sanding disk, string, and chalk, etc.

Expendables—Items that become unfit for use and must be periodically replaced. Examples include items such as blades, apexs, drill bits, and reamers.

Hardware—Items that become part of the end product, i.e. bench stock items such as nuts, bolts, fasteners and screws.

Common Accessories—Items that may have multiple uses such as fittings, cables, adapters, etc.

Support Equipment—Items that are used to aide in performing tasks such as drop lights, extension cords, multiple air hose couplings, air hoses, etc.

Chits—Numbered tags, manufactured of metal, plastic or some material not easily damaged, used to identify a person who borrows a tool from a tool kit or shadow board.

Custody Account/Custodial Receipt Listing (CA/CRL)—A listing of all authorizations, on-hand assets and due-outs for each custodian by organization code and shop code.

FOD—Any damage caused by foreign objects to aircraft, engines, munitions, missiles, drones, space systems, support equipment, AGE, trainers or components thereof, that can be expressed in physical or economic (monetary) terms which may degrade the product, causing system or component malfunction, deterioration, or loss of life. All work centers performing maintenance on aircraft, missiles, engines, other major end items, or components thereof have a high potential for FOD.

Tool—Any instrument/object used by hand to perform work on a weapon system, component, assigned equipment or facilities.

Tool Kit Custodian Receipt Listing (TKCRL)—An inventory of all tools and other items in a tool kit. Includes the quantities, the kit ID number and the tool and item location, i.e. drawer or shelf.

Tool Kit and Tool Identification (ID) Number—A unique alphanumeric code of sufficient length to accommodate the current and proposed number of kits on an installation.

TDY Teams—A group of people (military or civilian), with specific skills, dispatched from their home station to another location, to provide specialized support to a weapon system or end item.

Shop Machinery Accessories/Attachments—Items such as dies, fixtures, tool holders, chucks,

endmills, shop aids (locally manufactured items used in conjunction with shop equipment to assist in the production of an end item or product), special machine tooling, end item unique items, equipment that may look like tools, but have been purchased or provided by a manufacture.

Locally Manufactured or Modified/Developed Tools—Tools and equipment that are designed, developed, and built locally.